

ARTICLES

Fundamental concepts

Effects of zero-point energy in elementary-system interactions	40
I. R. Senitzky	
Hyperspherical wave functions with orthogonal and permutational symmetry	48
Nir Barnea and Akiva Novoselsky	
QED theory of the nuclear recoil effect in atoms	59
V. M. Shabaev	
Solvable three-state model of a driven double-well potential and coherent destruction of tunneling	68
Laro Schatzer and Stefan Weigert	
Nonadiabatic transitions in a two-level quantum system: Pulse-shape dependence of the transition probability for a two-level atom driven by a pulsed radiation field	79
P. R. Berman, Lixin Yan, Keng-Hwee Chiam, and Ruwang Sung	
Reflectionless potentials for the one-dimensional Dirac equation: Pseudoscalar potentials	93
Y. Nogami and F. M. Toyama	
Kinematics and hydrodynamics of spinning particles	98
Erasmus Recami and Giovanni Salesi	
Generalized coherent states for the Pöschl-Teller potential and a classical limit	106
M. G. A. Crawford and E. R. Vrscaj	
Clauser-Horne-Shimony-Holt correlation and Clauser-Horne correlation do not lead to the largest violations of Bell's inequality	114
M. Ardehali	

Quantum information

Quantum computation with quantum dots	120
Daniel Loss and David P. DiVincenzo	
Theory of fault-tolerant quantum computation	127
Daniel Gottesman	

Atomic and molecular structure and dynamics

Approximate relativistic optimized potential method	138
T. Kreibich, E. K. U. Gross, and E. Engel	
Transition energy and lifetime for the ground-state hyperfine splitting of high-Z lithiumlike ions	149
V. M. Shabaev, M. B. Shabaeva, I. I. Tupitsyn, V. A. Yerokhin, A. N. Artemyev, T. Kühl, M. Tomaselli, and O. M. Zhrebtssov	
High-resolution carbon 1s photoelectron spectrum of ethene: <i>Ab initio</i> calculation of vibrational structure with dynamic localization of the core hole	157
J. Bozek, T. X. Carroll, J. Hahne, L. J. Sæthre, J. True, and T. D. Thomas	
Theoretical treatment of quasibound resonances in two-color resonant four-wave mixing spectroscopy	162
F. Di Teodoro and E. F. McCormack	
Auger width of metastable states in antiprotonic helium	174
J. Révai and A. T. Kruppa	
Measurements of the $1s2s\ ^1S_0-1s2p\ ^3P_{1,0}$ transitions in heliumlike nitrogen	180
J. K. Thompson, D. J. H. Howie, and E. G. Myers	